REMARKS

Claims 12-136 are pending in the application and stand rejected in the Office Action. With this reply, Applicants have amended Claims 12-16, 18, 21-23, 26-28, 30-32, 37, 39-44, 48-51, 53-58, 63-64, 70-72, 77, 83-88, 92-95, 99, 101-106, 110-115, 118-123, 128-132, and Claim 136. Upon entry of the amendments, Claims 12-136 remain pending.

Support for the amended claims is found in the specification as originally filed. In addition to addressing various formal matters (deletions of the word "about" and the like), the amendments further define embodiments of the invention as described in Applicants' specification. For example, amendments to the independent claims clarify the order of steps described in the specification. Applicants respectfully request entry of the amendments.

INTERVIEW WITH EXAMINER BERMAN

Applicants would like to thank Examiner Berman for the courtesies extended to their representatives, David Suter and Mark Frentrup, in a personal interview (herein "The Interview" on September 8, 2005. The outstanding rejections under § 112 were discussed, along with the art rejections over the Sun Patent (U.S. Patent 5,414,049). Although final agreement was not reached with respect to any individual claim or claims, Applicants agreed to amend claims to remove the word "about" to address the written description rejections. Applicants also agreed to amend the claims to clarify the order of process steps recited. Applicants understand that such amendments would be favorably considered, so as to resolve the outstanding rejections under §§ 112, 102, and 103.

OBJECTION TO THE REISSUE APPLICATION

The Application is objected to under 37 C.F.R. § 1.172(a) (Rule 172a). The objection was discussed at The Interview, but no resolution was reached. Applicants agreed to traverse the objection with this reply. Applicants respectfully submit that the papers establishing ownership interest and giving consent to the reissue application are in proper order; they therefore request that the objection be withdrawn. If, however, the objection is maintained, Applicants request clarification of the requirement, and will then provide re-executed papers for establishing inventorship and consent to the reissue.

First, the Office Action states there is no indication that the party signing the submission is an appropriate party to sign on behalf of the Assignee. But both papers are signed by the C.E.O. (Chief Executive Officer) of the Assignee, a position explicitly provided in M.P.E.P. § 324 as having apparent authority to do so.

The Office Action next states that the Assignee has not established its ownership interest in the patent for which reissue is being requested. It appears the Office is objecting to the fact that the person who is making the statement under 37.C.F.R. § 3.73(b) (Rule 73b) is also the person who is signing the consent to the reissue under Rule 172(a). This is said to be not acceptable.

Applicants cannot find any requirements in the Patent Statute, Patent Office Rules, or the M.P.E.P. prohibiting the same individual from signing both documents. Further, such a requirement would not appear to be logical, as it would require, in the present case, the C.E.O. to sign one paper but then instruct a subordinate to sign the second. Applicants respectfully submit that the C.E.O. is an appropriate party to sign on behalf of the Assignee for all purposes, and that the rules do not forbid the C.E.O. to sign both the consent to the reissue and the statement under

Rule 73(b).

Applicants further respectfully submit that the M.P.E.P. contemplates that at times a single individual can both give consent to the reissue Application and establish its own ownership interest. Attention is respectfully drawn to M.P.E.P. § 1410.01, which states "compliance with [Rule 73(b)] may be provided as part of the same paper in which consent by the Assignee is provided (emphasis added)". Because the rules contemplate that a single paper (presumably with a single signature, absent any suggestion to the contrary) can provide both consent and proof of ownership, it is logical to infer that it is acceptable for a single individual to sign when the information is provided -- as here -- in two separate papers.

For the reasons discussed above, Applicants believe that the application papers are in order and respectfully request that the objection be withdrawn. The Office is invited to telephone the undersigned Applicants' representative if that would be helpful in expediting compliance with this requirement.

COPY OF NEW CLAIMS 12-136

The Office Action further states that a copy of Claims 12-136 submitted on August 19, 2003, should be included with the response to the Office Action, because new claims submitted in a reissue application must be underlined in their entirety (37 C.F.R. § 1.173(d)). To comply with this instruction, Applicants submit, attached to this Office Action as Appendix A, a copy of the claims submitted in August of 2003 showing all of the new claims underlined. Applicants respectfully request that the attached underlined claims be made part of the file and that they be accepted as having completed the reissue application.

REJECTIONS UNDER 35 U.S.C. § 112

Claims 12-136 are rejected under 35 U.S.C. § 112 first paragraph as failing to comply with the written description requirement. Briefly, the Examiner objects to the use of the word "about" to modify various temperature, time, and irradiation limitations, stating that the specification does not provide support for that term. In response, and as discussed with the Examiner in the Interview, Applicants have amended the claims to remove the words "about." It should be noted, however, that the word "about" in claims reciting a temperature range of 100°C to 130°C has been replaced with "around" consistent with the specification at column 4, line 59. See e.g., Claims 30 and 39. Accordingly, Applicants respectfully request that the rejection be withdrawn.

Claims 12-136 are also rejected under § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim subject matter applicant regards as the invention. The Office Action states that the order of steps, such as heating, cooling, subjecting to pressure, irradiating, and processing to form an artificial joint component, should be clearly set forth in the claims in order to distinguish the methods and products recited from the art of record.

In response, Applicants have amended the independent claims where needed to clarify the order of the steps. That is, in general, a UHMWPE is first irradiated, then heated, then subjected to pressure, then cooled, then fashioned into an artificial joint. Applicants respectfully submit that recitation in the claims of the order of the steps both conforms the claims to subject matter of Applicants' invention as described in the specification. Accordingly, Applicants respectfully request withdrawal of the rejections of Claims 12-136, under 35 U.S.C. § 112, second paragraph.

REJECTIONS UNDER 35 U.S.C. §§ 102 AND 103

Claims 40-44, 52-53, 84-88, 97-101, 111-115, 118, 128-132, and 136 are rejected as anticipated by the U.S. Patent 5,414,049, Sun et al., issued May 9, 1995 (herein the "Sun Patent"). The claims are considered to be anticipated because the claims do not specify the order of various process steps, such as irradiation and heating. As pointed out in the Office Action, the Sun Patent discloses several process steps that correspond to individual process steps of the claims. To the extent that the recited process steps of the claims do not necessarily differ in the order in which they are carried out in relation to the Sun Patent, the claims are said to be anticipated.

As noted above, Applicants have amended the claims to clarify the order in which irradiation, heating, subjecting to pressure, cooling, fashioning implants, and the like, are carried out. Applicants respectfully submit that the amended claims, by specifying the order in which process steps are carried out, patentably distinguish over the processes and products described in the Sun Patent. Accordingly, Applicants respectfully request the rejection be withdrawn.

Claims 12-20, 23-26, 38-39, 45-51, 54-62, 66-76, 79-83, 89-95, 102-110, 116-117, 119-125, and 133 are rejected as anticipated by or in the alternative as obvious over the Sun Patent. As noted above, Applicants have amended the independent claims to clarify the order of the process steps carried out in the methods and in the product by process claims. Applicants respectfully submit that the amended claims thereby distinguish over the disclosure of the Sun Patent. To the extent that the Sun Patent discloses processes involving compression, the compression is performed during the formation of the raw material, prior to cross-linking by irradiation. Compression is not disclosed to be performed after irradiation. That is, the Sun Patent does not disclose or suggest methods or products made by those methods wherein a

UHMWPE is first crosslinked, then heated, then subjected to pressure, then cooled, and then fashioned into an implant. Accordingly, Applicants respectfully request the rejection be withdrawn.

Claims 21, 22, 37, 49, 50, 63, 64, 77, 93, and 94 are rejected as obvious over the Sun Patent in view of U.S. Patent 5,037,928, Li et al., issued August 6, 1991 (herein the "Li Patent").

As discussed above, the independent claims from which the rejected claims depend have been amended to be novel and non-obvious in view of the Sun Patent, as discussed above. Applicants respectfully submit that the Li Patent does not make up for the deficiencies of the Sun Patent. Accordingly, Applicants respectfully request that the rejection be withdrawn.

CONCLUSION

For the reasons discussed above, Applicants believe that Claims 12-136 as amended are in a state of allowability and respectfully request an early Notice of Allowance. The Examiner is invited to telephone the undersigned if that would be helpful to resolving any issues.

Respectfully submitted,

Dated: 18 October 2005

By: ______________________

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.:	10/643,674
Filing Date:	August 19, 2003
Applicant:	HYON, Suong-Hyu et al.
Group Art Unit:	1711
Examiner:	BERMAN, Susan
Title:	ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE MOLDED ARTICLE FOR ARTIFICIAL JOINTS AND METHOD OF PREPARING SAME
Attorney Docket:	1736-000001/REB

APPENDIX A TO AMENDMENT FILED OCTOBER 18, 2005: COPY OF PREVIOUSLY SUBMITTED NEW CLAIMS AS FILED ON AUGUST 19, 2003

Dear Sir:

In response to the Office Action mailed May 18, 2005, attached is a copy of the claim listing containing new claims as filed with the August 19, 2003 reissue application, underlined in their entirety.

LISTING OF CLAIMS

1– 11. (cancelled)

12. (new) An ultra high molecular weight polyethylene block having a molecular weight of not less than about 5 million, having been crosslinked by irradiation at a level of at least about 1 MR and having been heated, subjected to pressure, and cooled.

13. (new) An ultra high molecular weight polyethylene block according to Claim 12, wherein said irradiation is gamma irradiation at a level of from about 1 MR to about 5 MR.

14. (new) An ultra high molecular weight polyethylene block according to Claim 12, wherein said heating is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

15. (new) An ultra high molecular weight polyethylene block according to Claim 14, wherein said heating is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to the melting temperature.

16. (new) An ultra high molecular weight polyethylene block according to Claim 15, wherein said heating is in a range from the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

17. (new) An ultra high molecular weight polyethylene block according to Claim 12, wherein said pressure is applied so as to deform the block.

18. (new) An ultra high molecular weight polyethylene block according to Claim 17, wherein deformation is in a direction perpendicular to the plane of compression.

19. (new) An ultra high molecular weight polyethylene block according to Claim 17, wherein said block is cooled in a compression-deformed state under pressure.

20. (new) An ultra high molecular weight polyethylene block according to Claim 18, which has an orientation of crystal planes in a direction parallel to the compression plane.

21. (new) An ultra high molecular weight polyethylene block according to Claim 18, wherein said block, after compression, has a thickness of at least about 5 mm in a direction perpendicular to the compression plane.

22. (new) An ultra high molecular weight polyethylene block according to Claim 18, wherein said block, prior to compression, has a thickness of at least about 3 cm.

23. (new) An ultra high molecular weight polyethylene block having a molecular weight of not less than about 5 million, having been crosslinked by irradiation at a level of at least about 1 MR and having been heated to a compression-deformable temperature, subjected to pressure, and cooled so as to orient the crystal planes of said polyethylene.

24. (new) An ultra high molecular weight polyethylene block according to Claim 23, wherein said pressure is applied so as to compression deform the block in a direction perpendicular to the compression plane, and wherein said block is cooled and solidified in a compression-deformed state under pressure.

25. (new) An ultra high molecular weight polyethylene block according to Claim 24, wherein said block has an orientation of crystal planes in a direction parallel to the compression plane.

26. (new) An ultra high molecular weight polyethylene block according to Claim 23, wherein said heating is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

27. (new) An ultra high molecular weight polyethylene block according to Claim 26, wherein said heating is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to the melting temperature.

28. (new) An ultra high molecular weight polyethylene block according to Claim 26, wherein said heating is in a range from the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

29. (new) An ultra high molecular weight polyethylene block according to Claim 23, wherein said block has been subjected to isothermal crystallization.

30. (new) An ultra high molecular weight polyethylene block according to Claim 23, wherein said block has been subjected to isothermal treatment at a temperature of from about 100°C to about 130°C for a period of from about 1 hour to about 20 hours.

31. (new) An ultra high molecular weight polyethylene block having a molecular weight not less than about 5 million, having been crosslinked by irradiation at a level of at least about 1 MR and having been heated to a temperature of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to the melting temperature, subjected to pressure, and cooled.

32. (new) An ultra high molecular weight polyethylene block according to Claim 31, wherein said irradiation is gamma irradiation at a level of from about 1 MR to about 5 MR.

33. (new) An ultra high molecular weight polyethylene block according to Claim 31, wherein said pressure is applied so as to deform the block.

34. (new) An ultra high molecular weight polyethylene block according to Claim 33, wherein said deformation is in a direction perpendicular to the plane of compression.

35. (new) An ultra high molecular weight polyethylene block according to Claim 34, wherein said block is cooled in a compression-deformed state under pressure.

36. (new) An ultra high molecular weight polyethylene block according to Claim 35, which has an orientation of crystal planes in a direction parallel to the compression plane.

37. (new) An ultra high molecular weight polyethylene block according to Claim 34, wherein said block, after compression, has a thickness of at least about 5 mm in a direction perpendicular to the compression plane.

38. (new) An ultra high molecular weight polyethylene block according to Claim 31, wherein said block has been subjected to isothermal crystallization.

39. (new) An ultra high molecular weight polyethylene block according to Claim 31, wherein said block has been subjected to isothermal treatment at a temperature of from about 100°C to about 130°C for a period of from about 1 hour to about 20 hours.

40. (new) A method for producing an ultra high molecular weight polyethylene block, comprising:

(a) crosslinking an ultra high molecular weight polyethylene block having a molecular weight not less than 5 million by irradiating the block with a high energy radiation at a level of at least about 1 MR;

(b) heating said crosslinked block up to a compression deformable temperature;

(c) subjecting said heated block to pressure; and

(d) cooling said block.

41. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 40, wherein said irradiation is gamma irradiation at a level of from about 1 MR to about 5 MR.

42. (new) A method for producing an ultra high molecular weight polyethylene block to Claim 40, wherein said heating is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

43. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 42, wherein said heating is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to the melting temperature.

44. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 42, wherein said heating is in a range from the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

45. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 40, wherein said pressure is applied so as to deform the block.

46. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 45, wherein said deformation is in a direction perpendicular to the plane of compression.

47. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 46, wherein said block is cooled in a compression-deformed state under pressure.

48. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 47, which has an orientation of crystal planes in a direction parallel to the compression plane.

49. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 46, wherein said block, after compression, has a thickness of at least about 5 mm in a direction perpendicular to the compression plane.

50. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 46, wherein said block, prior to compression, has a thickness of at least about 3 cm.

51. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 46, wherein said cooled block has a melting point of from about 135° C to about 155° C.

52. (new) A method of producing an ultra high molecular weight polyethylene block according to Claim 40, wherein after said subjecting to pressure step, said block is subjected to isothermal crystallization.

53. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 40, wherein after said subjecting to pressure step, said block is subjected to isothermal treatment at a temperature of from about 100°C to about 130°C for a period of from about 1 hour to about 20 hours.

54. (new) An artificial joint component for implantation in a human or other animal, wherein said component is formed from an ultra high molecular weight polyethylene block having a molecular weight not less than about 5 million, said block having been crosslinked by irradiation at a level of at least about 1 MR and having been heated, subjected to pressure, and cooled.

55. (new) An artificial joint component according to Claim 54, wherein said irradiation is gamma irradiation at a level of from about 1 MR to about 5 MR.

56. (new) An artificial joint component according to Claim 54, wherein said heating is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

57. (new) An artificial joint component according to Claim 56, wherein said heating is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to the melting temperature.

58. (new) An artificial joint component according to Claim 56, wherein said heating is in a range from the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

59. (new) An artificial joint component according to Claim 54, wherein said pressure is applied so as to deform the block.

60. (new) An artificial joint component according to Claim 59, wherein said deformation is in a direction perpendicular to the plane of compression.

61. (new) An artificial joint component according to Claim 60, wherein said block is cooled in a compression-deformed state under pressure.

62. (new) An artificial joint component according to Claim 61, which has an orientation of crystal planes in a direction parallel to the compression plane.

63. (new) An artificial joint component according to Claim 60, wherein said block has a thickness, after compression, of at least about 5 mm in a direction perpendicular to the compression plane.

64. (new) An artificial joint component according to Claim 60, wherein said block, prior to compression, has a thickness of at least about 3 cm.

65. (new) An artificial joint component according to Claim 54, wherein said irradiation is conducted in the presence of oxygen.

66. (new) An artificial joint component according to Claim 54, wherein said irradiation is conducted under a vacuum or in an inert atmosphere.

67. (new) An artificial joint component according to Claim 54, wherein said block, after cooling, is processed to form said component.

68. (new) An artificial joint component according to Claim 65, wherein said block, after cooling, is processed by a process comprising cutting said block to form said component.

69. (new) An artificial joint component according to Claim 54, wherein said block has been subjected to isothermal crystallization.

70. (new) An artificial joint component according to Claim 54, wherein said block has been subjected to isothermal treatment at a temperature of from about 100°C to about 130°C for a period of from about 1 hour to about 20 hours.

71. (new) An artificial joint component for implantation in a human or other animal, wherein said component is formed from an ultra high molecular weight polyethylene block having a molecular weight not less than about 5 million, said block having been crosslinked by irradiation at a level of at least about 1 MR and having been heated to a temperature of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to the melting temperature, subjected to pressure, and cooled.

72. (new) An artificial joint component according to Claim 71, wherein said irradiation is gamma irradiation at a level of from about 1 MR to about 5 MR.

73. (new) An artificial joint component according to Claim 71, wherein said pressure is applied so as to deform the block.

74. (new) An artificial joint component according to Claim 73, wherein said deformation is in a direction perpendicular to the plane of compression.

75. (new) An artificial joint component according to Claim 74, wherein said block is cooled in a compression-deformed state under pressure.

76. (new) An artificial joint component according to Claim 75, which has an orientation of crystal planes in a direction parallel to the compression plane.

77. (new) An artificial joint component according to Claim 74, wherein said block has a thickness, after compression, of at least about 5 mm in a direction perpendicular to the compression plane.

78. (new) An artificial joint component according to Claim 71, wherein said irradiation is conducted in the presence of oxygen.

79. (new) An artificial joint component according to Claim 71, wherein said irradiation is conducted under a vacuum or in an inert atmosphere.

80. (new) An artificial joint component according to Claim 71, wherein said block, after cooling, is processed to form said component.

81. (new) An artificial joint component according to Claim 78, wherein said block, after cooling, is processed by a process comprising cutting said block to form said component.

82. (new) An artificial joint component according to Claim 71, wherein said block has been subjected to isothermal crystallization.

83. (new) An artificial joint component according to Claim 71, wherein said block has been subjected to isothermal treatment at a temperature of from about 100°C to about 130°C for a period of from about 1 hour to about 20 hours.

84. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component for implantation in a human or other animal, comprising:

(a) crosslinking an ultra high molecular weight polyethylene block having a molecular weight not less than 5 million by irradiating the block with a high energy radiation at a level of at least about 1 MR;

(b) heating said crosslinked block up to a compression deformable temperature;

(c) subjecting said heated block to pressure;

(d) cooling said block; and

(e) processing said block to form said component.

85. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 84, wherein said irradiation is gamma irradiation at a level of from about 1 MR to about 5 MR.

86. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 84, wherein said heating is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

87. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 86, wherein said heating is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to the melting temperature.

88. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 86, wherein said heating is in a range from the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

89. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 84, wherein said pressure is applied so as to deform the block.

90. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 89, wherein said deformation is in a direction perpendicular to the plane of compression.

91. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 90, wherein said block is cooled in a compression-deformed state under pressure.

92. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 91, which has an orientation of crystal planes in a direction parallel to the compression plane.

93. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 90, wherein said block has a thickness, after compression, of at least about 5 mm in a direction perpendicular to the compression plane.

94. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 90, wherein said block, prior to compression, has a thickness of at least about 3 cm.

95. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 92, wherein said cooled block has a melting point of from about 135° C to about 155° C.

96. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 84, wherein said irradiation is conducted in the presence of oxygen.

97. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 84, wherein said irradiation is conducted under a vacuum or in an inert atmosphere.

98. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 84, additionally comprising processing said block, after cooling, to form said component.

99. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 96, additionally comprising processing said block, after cooling, by a process comprising cutting said block to form said component.

100. (new) A method of producing an ultra high molecular weight polyethylene artificial joint component according to Claim 84, wherein after said subjecting to pressure step, said block is subjected to isothermal crystallization.

101. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 84, wherein after said subjecting to pressure step, said block is subjected to isothermal treatment at a temperature of from about 100°C to about 130°C for a period of from about 1 hour to about 20 hours.

102. (new) An ultra high molecular weight polyethylene block having been crosslinked by irradiation, subjected to pressure at a deformation temperature, and subjected to isothermal treatment.

103. (new) An ultra high molecular weight polyethylene block according to Claim 102, wherein said irradiation is gamma irradiation at a level of at least about 1 MR.

104. (new) An ultra high molecular weight polyethylene block according to Claim 102, wherein said deformation temperature is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

105. (new) An ultra high molecular weight polyethylene block according to Claim 104, wherein said deformation temperature is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to the melting temperature.

106. (new) An ultra high molecular weight polyethylene block according to Claim 104, wherein said deformation temperature is in a range from the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

107. (new) An ultra high molecular weight polyethylene block according to Claim 102, wherein said pressure is applied so as to deform the block.

108. (new) An ultra high molecular weight polyethylene block according to Claim 107, wherein said block is cooled in a compression-deformed state under pressure.

109. (new) An ultra high molecular weight polyethylene block according to Claim 108, which has an orientation of crystal planes in a direction parallel to the compression plane.

110. (new) An ultra high molecular weight polyethylene block according to Claim 102, wherein said isothermal treatment is at a temperature of from about 100° C to about 130° C for a period of from about 1 hour to about 20 hours.

111. (new) A method for producing an ultra high molecular weight polyethylene block, comprising:

(a) crosslinking an ultra high molecular weight polyethylene block having a molecular weight not less than 5 million by irradiating the block with a high energy radiation at a level of at least about 1 MR;

(b) subjecting said block to pressure at a deformation temperature; and

(c) subjecting said block to isothermal treatment.

112. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 111, wherein said irradiation is gamma irradiation at a level of at least about 1 MR.

113. (new) A method for producing an ultra high molecular weight polyethylene block to Claim 111, wherein said deformation temperature is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

114. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 113, wherein said deformation temperature is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to the melting temperature.

115. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 113, wherein said deformation temperature is in a range from the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

116. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 111, wherein said pressure is applied so as to deform the block.

117. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 116, wherein said block is cooled in a compression-deformed state under pressure.

118. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 111, wherein said isothermal treatment is at a temperature of from about 100° C to about 130° C for a period of from about 1 hour to about 20 hours.

119. (new) An artificial joint component for implantation in a human or other animal, wherein said component is formed from an ultra high molecular weight polyethylene block having been crosslinked by irradiation, subjected to pressure at a deformation temperature, and subjected to isothermal treatment.

120. (new) An artificial joint component according to Claim 119, wherein said irradiation is gamma irradiation at a level of at least about about 1 MR.

121. (new) An artificial joint component according to Claim 119, wherein said deformation temperature is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

122. (new) An artificial joint component according to Claim 121, wherein said deformation temperature is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to the melting temperature.

123. (new) An artificial joint component according to Claim 121, wherein said deformation temperature is in a range from the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

124. (new) An artificial joint component according to Claim 119, wherein said pressure is applied so as to deform the block.

125. (new) An artificial joint component according to Claim 124, wherein said block is cooled in a compression-deformed state under pressure.

126. (new) An artificial joint component according to Claim 119, wherein said irradiation is conducted in the presence of oxygen.

127. (new) An artificial joint component according to Claim 126, wherein, after said isothermal treatment, said block is processed by a process comprising cutting said block to form said component.

128. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component for implantation in a human or other animal, comprising:

(a) crosslinking an ultra high molecular weight polyethylene block by irradiating the block with a high energy radiation;

(b) subjecting said heated block to pressure at a deformation temperature; and

(c) subjecting said block to isothermal treatment; and

(d) processing said block to form said component.

129. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 128, wherein said irradiation is gamma irradiation at a level of at least about 1 MR.

130. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 128, wherein said deformation temperature is in a range of from about 50° C lower than the melting temperature of the

crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

131. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 130, wherein said deformation temperature is in a range of from about 50° C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to the melting temperature.

132. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 130, wherein said deformation temperature is in a range from the melting temperature of the crosslinked ultra high molecular weight polyethylene to about 80° C higher than the melting temperature.

133. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 128, wherein said pressure is applied so as to deform the block.

134. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 128, wherein said irradiation is conducted in the presence of oxygen.

135. (new) A method for producing an ultra high molecular weight polyethylene artificial joint component according to Claim 134, wherein said processing step comprises cutting said block to form said component.

136. (new) A method for producing an ultra high molecular weight polyethylene block according to Claim 128, wherein said isothermal treatment is at a temperature of from about 100° C to about 130° C for a period of from about 1 hour to about 20 hours.